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NEOTYPE DESIGNATION FOR *Aedes* (*Stegomyia*)  
*albopictus* (Skuse)  
(DIPTERA: CULICIDAE)<sup>1,2</sup>

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*Aedes* (*Stegomyia*) *albopictus* (Skuse) is one of the most common and widespread species of mosquito throughout Southeast Asia as well as being one of the most important from a standpoint of disease transmission. It belongs to a group of closely related species which are not easily separated and unfortunately erroneous identifications are not infrequent among collections submitted to us. It seems that many of the records of this species which appear in the literature must be accepted with some reservation. It is hoped that the present study of the subgenus being undertaken by the South East Asia Mosquito Project (SEAMP) will in due course help to clarify the situation.

According to Skuse's original description, made from 3 ♀♀, the type of *albopictus* was deposited in the Australian Museum. According to Stone *et al.* (1959), the type was in the School of Public Health and Tropical Medicine, University of Sydney, Sydney, Australia. However, enquiries addressed to these and other museums in Australia and elsewhere have failed to show that any type material is still in existence. In view of this it becomes imperative to designate a neotype for this important species.

In the present paper a detailed description of this neotype is given. In addition, some diagnostic characters for separating *albopictus* from closely related species, which have often been misidentified, are also given in order to assist field workers.

The nomenclature chosen for the chaetotaxy of the pupa and the terminology of structural parts of the adult as used in this paper largely follows that of Belkin (1962).

*Aedes* (*Stegomyia*) *albopictus* (Skuse)

(Figs. 1, 2)

*Aedes* (*Stegomyia*) *albopictus* (Skuse), 1894, Indian Mus. Notes 3(5):20 (♀;  
*Culex albopictus* Skuse). Type locality: Calcutta, India.

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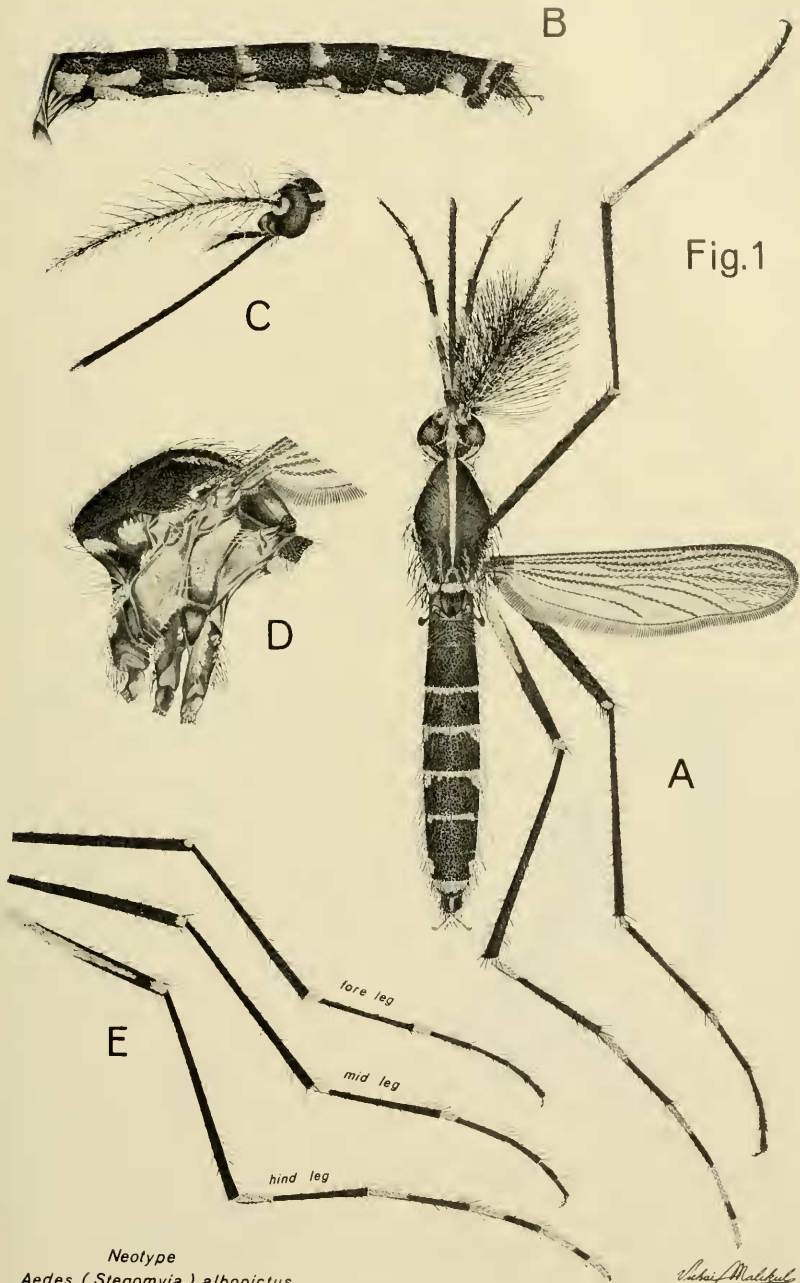
<sup>2</sup> Immediate publication secured by full payment of page charges—Editor.

Neotype hereby designated: ♂ (No. 1-14-104) with associated pupal skin and terminalia slide (68/1054), Botanical Garden, Calcutta, Bengal, India, 3. VII. 1967. (S. Ramalingam; E. D. Abraham & E. S. Abraham collectors). Deposited in U. S. National Museum.

MALE. *Head.* (Fig. 1A). Proboscis dark scaled, as long as fore femur; palpus longer than proboscis, with a white basal band on each of segments 2-5; those on segments 4, 5 incomplete dorsally; segments 4, 5 subequal, slender, upturned, and with only a few short hairs; antenna plumose, slightly shorter than proboscis; clypeus bare; torus covered with white scales except on dorsal side; decumbent scales of vertex all broad and flat; erect forked scales dark, not numerous, restricted to occiput; vertex with a median stripe of broad white scales, with broad dark scales on each side interrupted by a lateral stripe of broad white scales followed by a patch of white broad scales ventrally. *Thorax.* (Figs. 1A, D). Scutum with narrow dark scales and a prominent median longitudinal stripe of similar white ones, the median stripe narrows slightly posteriorly and forks at beginning of the prescutellar space, there is on each side a posterior dorsocentral white line which does not reach to the middle of the scutum; a patch of broad flat white scales on the lateral margin just before the level of the wing root and few narrow curved white scales over the wing root; acrostichal bristles absent; dorsocentral bristles present; scutellum with broad white scales on all lobes and with a few broad dark ones at the apex of mid lobe; anterior pronotum (*apn*) with broad white scales; posterior pronotum (*ppn*) with broad white scales and some dark narrow ones dorsally; paratergite with broad white scales; postspiracular (*psp*) area without scales; patches of broad white scales on propleuron (*ppl*), on the subspiracular (*ssp*) area, on the upper and lower portions of sternopleuron (*stp*) and on the upper and lower portions of mesepimeron (*mep*); mesepimeron (*mep*) scale patches connected forming a V-shaped white scale patch, the open side of the V directed backwards; lower mesepimeron (*mep*) without bristle; metameron bare. *Wing.* (Fig. 1A). Wing with dark scales on all veins except for a minute basal spot of white scales on the costa. *Haltere* with dark scales. *Legs.* (Fig. 1E). Coxae with patches of white scales; knee-spots present on all femora; fore and mid femora dark anteriorly; paler posteriorly; hind femur anteriorly with a broad white longitudinal stripe which widens at base and is narrowly separated from the apical white scale patch; fore and mid tibiae dark anteriorly, paler posteriorly; hind tibiae dark; fore and mid tarsi with basal white bands on segments 1-2; hind tarsus with basal white bands on segments 1-4, segment 5 all white; fore and mid legs with tarsal claws unequal, the larger one toothed, the smaller one simple; hind leg with tarsal claws equal, simple. *Abdomen.* (Figs. 1A, B). Abdominal segment I with white scales on laterotergite; terga III-VI each with a basal transverse white band which widens laterally; with lateral white spots; the lateral spots not connected with the basal transverse bands; terga II, VII with lateral white spots only; sternum VIII largely covered with white scales (the description was made before the terminalia were re-

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Fig. 1, *Aedes (Stegomyia) albopictus* (Skuse). A, dorsal aspect of the neotype male; B, lateral aspect of the neotype male abdomen; C, lateral aspect of the neallotype female head; D, lateral aspect of the neotype male thorax; E, anterior surface of the neotype male legs.



Neotype  
*Aedes (Stegomyia) albopictus*

*Shihai Malloch*

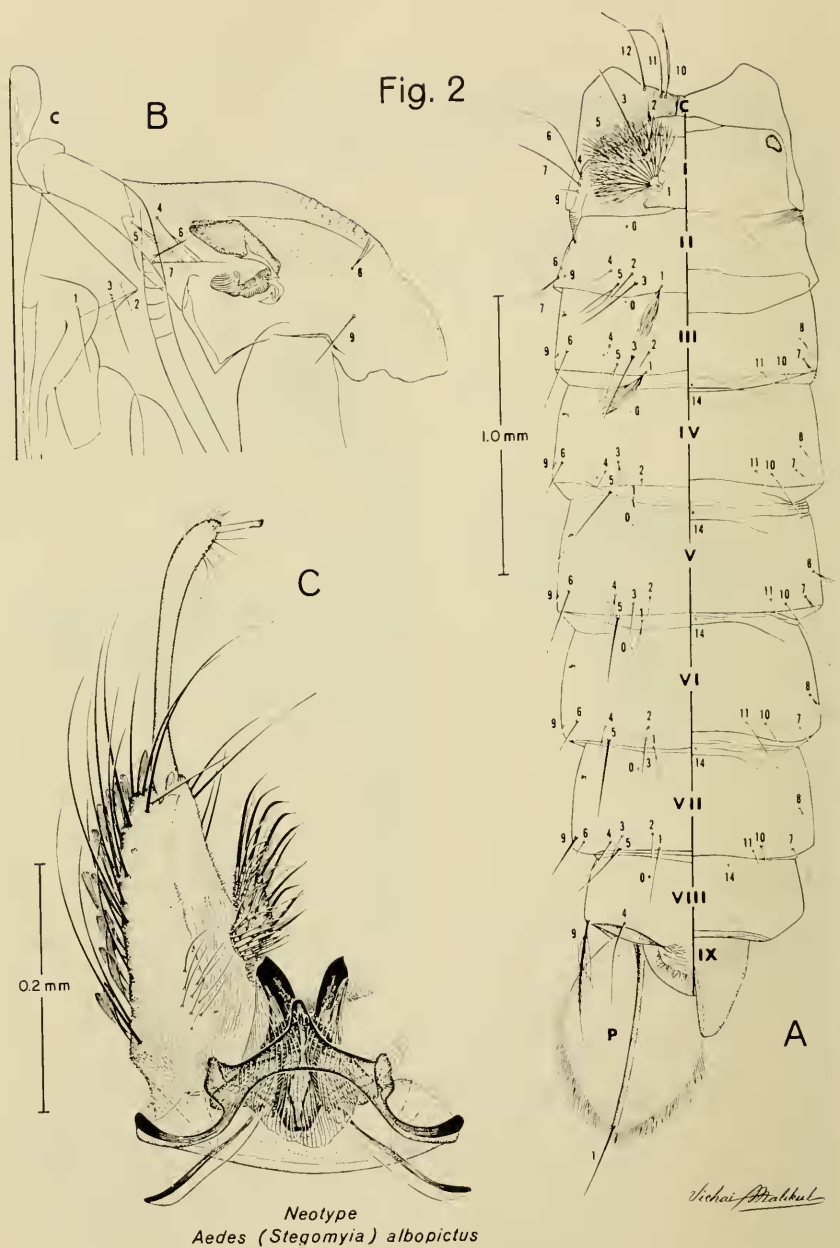


Fig. 2, *Aedes (Stegomyia) albopictus* (Skuse). A, B, dorsoventral aspects of the neotype male pupa; C, tergal aspect of the neotype male terminalia.

moved). *Terminalia*. (Fig. 2C). Basimere relatively short and broad, 2 times as long as wide; its scales restricted to dorsolateral, lateral and ventral areas; with a patch of 9 hairs on the basomesal area of dorsal surface; mesal surface extensively membranous; claspette large, mushroom-like, with numerous setae and with several widened specialized curved setae on the expanded distal part; distimere simple, elongate, apex somewhat swollen and with some hairs; with a spiniform process at apex; aedeagus with distinct lateral sclerotized plates; with several teeth on each side; paraprocts without teeth; cercal setae absent; ninth tergum with a conspicuous horn-like median projection and with two hairy lateral lobes.

Neo-Allotype: ♀ (No. 1-14-15) with same data as neotype male. Deposited in U.S. National Museum.

FEMALE. (Fig. 1C). Essentially as in the male. Differs from the male in the following respects: Palpus  $\frac{1}{5}$  of proboscis, with white scales on apical half. Fore and mid-legs with tarsal claws equal, simple. Abdominal basal bands on terga II-VII; segment VIII largely retracted.

PUPA. (Figs. 2A, B). Chaetotaxy as shown in figure which was drawn from the skin of the neotype male. Hair 2-I and 3-I not widely separated, the distance between them as the distance between 4-I and 5-I; hair 1-II branched; hair 2-II laterad of hair 3-II; hairs 3-II and 3-III simple, shorter than segment III; hairs 5-IV, 5-V and 5-VI simple, not reaching beyond the posterior margin of the following segment; hair 9-VIII single, barbed; paddle margins with fringe; hair 1-P single.

TAXONOMIC DISCUSSION. The male terminalia of this species having the IXth tergum with a conspicuous horn-like median projection differs from all other species that have been described in this subgenus. The external diagnostic characters for separating *Aedes* (*Stegomyia*) *albopictus* (Skuse) from *A. (S.) pseudalbopictus* Borel, *A. (S.) scutellaris* (Walker) and *A. (S.) aegypti* (Linnaeus) are as follows.

*A. albopictus* (male and female) can be distinguished from *A. pseudalbopictus* (male and female) by the presence of a patch of broad flat white scales on the lateral margin of the scutum just before the level of wing root; *pseudalbopictus* has only narrow curved white scales in this position.

*A. albopictus* (male and female) can be distinguished from *A. scutellaris* (male and female) by the abdominal lateral white spots which are not connected with the abdominal basal white bands and by having the supraalar white line not clearly defined and with only narrow scales posteriorly; in *scutellaris* the abdominal lateral white spots are connected with the tergal bands; the supraalar white line is complete, extending over the wing root towards the scutellum and with broad scales posteriorly.

When scutal markings were rubbed off, *A. aegypti* has been misidentified as *albopictus*. It can be distinguished by having the two

mesepimeral scale patches separated whereas they are connected in *albopictus*.

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### A NEW SYNONYMY IN HYBOMITRA

(DIPTERA: TABANIDAE)

A comparison of 178 specimens of *Hybomitra metabola* (McDunnough, 1922, Canad. Ent. 54:239) from North America with 18 specimens of *H. lurida* (Fallen, 1817, Tabanii et Xylophagii Sveciae:5) from Europe shows such close agreement that the use of the latter name for the species in America seems necessary. McDunnough described *Tabanus metabolus* from Alberta, and we have seen specimens from Alaska, Yukon Territory, British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, Labrador, Newfoundland, Montana, Wyoming, Colorado, Minnesota, Wisconsin, New York, New Hampshire, and Maine. *Tabanus luridus* was described from "Scania," and the specimens we examined came from Germany, Scotland, Denmark, Finland, Sweden, "Lappland," and western U.S.S.R. Both sexes were represented from both faunal regions.—L. L. PECHUMAN, Cornell University, Ithaca, New York 14850, and ALAN STONE, Systematic Entomology Laboratory, Entomology Research Division, ARS, USDA, c/o U.S. National Museum, Washington, D. C. 20560.